

Application No. 09/376,604

Docket No.: AREX-P03-004

**AMENDMENTS TO THE CLAIMS**

1-112. (Cancelled)

113. (Currently amended) A method for inducing a therapeutic host immune response against a multi-epitopic *in vivo* antigen that does not elicit an effective host immune response, the method comprising:

contacting a multi-epitopic antigen present in a host's serum with a composition comprising a ~~binding agent non-radiolabeled antibody or antigen binding fragment thereof~~ that specifically binds to a first epitope on the multi-epitopic *in vivo* antigen, ~~the binding agent present in the composition being non-radiolabeled, and allowing the binding agent to form a binding agent/antigen pair whereby the antibody or antigen binding fragment thereof forms an immune complex with the antigen, and~~ whereby an effective host T cell response is elicited against the antigen in the binding agent/antigen pair immune complex.

114-116. (Cancelled)

117. (Previously presented) The method of claim 113, further comprising eliciting a humoral immune response against a second epitope on the antigen.

118. (Previously presented) The method of claim 113, wherein the multi-epitopic *in vivo* antigen is a soluble antigen.

119. (Previously presented) The method of claim 118, wherein the soluble antigen is a soluble tumor-associated antigen.

120. (Previously presented) The method of claim 118, wherein the soluble antigen is associated with a human cancer.

121-124. (Cancelled)

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125. (Currently amended) The method of claim 113, wherein the antibody is B43.13 which is producible by a hybridoma having ATCC deposit number PTA-1883, or an antigen binding fragment of said antibody.

126-128. (Cancelled)

129. (Previously presented) The method of claim 113, wherein the antigen is CA125.

130. (Previously presented) The method of claim 129, wherein the level of CA125 in the host's serum is greater than 100 U/ml.

131. (Currently amended) The method of claim ~~123~~ 113, wherein the antigen is a soluble circulating antigen and the antigen is contacted with a sufficient amount of antibody or antigen binding fragment thereof to present all the circulating antigen to the immune system.

132. (Cancelled)

133. (Currently amended) The method of claim ~~132~~ 113, wherein the antigen is contacted with ~~binding agent~~ the antibody or antigen binding fragment thereof in an amount from 1 µg to 200 µg per kg of body weight of the host.

134. (Currently amended) The method of claim 133, wherein ~~allowing the binding agent to form a binding agent/antigen pair presents~~ the immune complex results in the presentation of other epitopes on the antigen to the host's immune system.

135. (Currently amended) A method for inducing a therapeutic host immune response against a multi-epitopic *in vivo* antigen that does not elicit an effective host immune response, comprising administering to the host a composition comprising a ~~binding agent~~ non-radiolabeled antibody or antigen binding fragment thereof that specifically binds to an epitope on the multi-epitopic *in vivo* antigen, the binding agent present in the composition being non-radiolabeled, thereby forming a binding agent/antigen pair, whereby the antibody or antigen binding fragment thereof forms an immune complex with the antigen, and whereby an effective host T cell response is elicited against the antigen, the ~~binding agent~~ antibody or antigen binding fragment

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thereof being present in the composition in an amount of from 0.1  $\mu\text{g}$  to ~~2-mg~~ 200  $\mu\text{g}$  per kg of body weight of the host.

136. (Cancelled)

137. (Previously presented) The method of claim 135, wherein the antigen is a soluble antigen.

138. (Previously presented) The method of claim 135, wherein the antigen is a tumor antigen.

139. (Previously presented) The method of claim 137, wherein the antigen is a tumor antigen.

140. (Cancelled)

141. (Currently amended) The method of claim 113, wherein the composition ~~comprising a binding-agent~~ further comprises one or more adjuvants, one or more carriers, one or more excipients, one or more stabilizers, one or more pharmaceutically acceptable carriers and/or physiologically acceptable saline.

142. (Previously presented) The method of claim 113, wherein contacting comprises administering by any immunologically suitable route.

143. (Previously presented) The method of claim 142, wherein administering by any immunologically suitable route comprises administering by intravenous, subcutaneous, intraperitoneal, intradermal, intramuscular, or intralymphatic routes.

144. (Previously presented) The method of claim 142, wherein administering by any immunologically suitable route comprises administering in solution, tablet, or aerosol form.

145-169. (Cancelled)

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170. (Currently amended) The method of claim 135, wherein the composition comprising a ~~binding agent~~ further comprises one or more adjuvants, one or more carriers, one or more excipients, one or more stabilizers, one or more pharmaceutically acceptable carriers and/or physiologically acceptable saline.

171. (Previously presented) The method of claim 135, wherein the composition is administered by any immunologically suitable route.

172. (Previously presented) The method of claim 171, wherein administering by any immunologically suitable route comprises administering by intravenous, subcutaneous, intraperitoneal, intradermal, intramuscular, or intralymphatic routes.

173. (Previously presented) The method of claim 171, wherein administering by any immunologically suitable route comprises administering in solution, tablet, or aerosol form.

174. (Currently amended) A method for inducing a therapeutic host immune response against a multi-epitopic *in vivo* antigen that does not elicit an effective host immune response, the method comprising contacting a multi-epitopic *in vivo* antigen present in a host's serum with a composition comprising a ~~binding agent~~ non-radiolabeled antibody or antigen binding fragment thereof that specifically binds to an epitope on the multi-epitopic *in vivo* antigen, ~~the binding agent present in the composition being non-radiolabeled, and allowing the binding agent to form a binding agent/antigen pair whereby the antibody or antigen binding fragment thereof forms an immune complex with the antigen, wherein the binding agent/antigen and whereby the immune complex elicits an effective host humoral immune response against a second epitope of the multi-epitopic *in vivo* antigen.~~

175-179. (Cancelled)

180. (Previously presented) The method of claim 174, wherein the multi-epitopic *in vivo* antigen is a soluble antigen.

181. (Previously presented) The method of claim 180, wherein the soluble antigen is a soluble tumor-associated antigen.

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182. (Previously presented) The method of claim 180, wherein the soluble antigen is associated with a human cancer.

183-186. (Cancelled)

187. (Currently amended) The method of claim 174, wherein the ~~binding agent~~ antibody is B43.13 which is producible by a hybridoma having ATCC deposit number PTA-1883, or an antigen binding fragment of said antibody.

188-189. (Cancelled)

190. (Currently amended) The method of claim ~~185~~ 174, wherein the antibody or antigen binding fragment thereof is ~~a non-human~~ an animal antibody or antigen binding fragment thereof.

191. (Previously presented) The method of claim 174, wherein the antigen is CA125.

192. (Previously presented) The method of claim 191, wherein the level of CA125 in the host's serum is greater than 100 U/ml.

193. (Currently amended) The method of claim ~~185~~ 174, wherein the antigen is a soluble circulating antigen and the antigen is contacted with a sufficient amount of antibody or antigen binding fragment thereof to present all the circulating antigen to the immune system.

194. (Cancelled)

195. (Currently amended) The method of claim ~~194~~ 174, wherein the antigen is contacted with ~~binding agent~~ the antibody or antigen binding fragment thereof in an amount from 1 µg to 200 µg per kg of body weight of the host.

196. (Cancelled)

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197. (Currently amended) The method of claim 174, wherein the composition comprising a ~~binding agent~~ further comprises one or more adjuvants, one or more carriers, one or more excipients, one or more stabilizers, one or more pharmaceutically acceptable carriers and/or physiologically acceptable saline.

198. (Previously presented) The method of claim 174, wherein contacting comprises administering by any immunologically suitable route.

199. (Previously presented) The method of claim 198, wherein administering by any immunologically suitable route comprises administering by intravenous, subcutaneous, intraperitoneal, intradermal, intramuscular, or intralymphatic routes.

200. (Previously presented) The method of claim 198, wherein administering by any immunologically suitable route comprises administering in solution, tablet, or aerosol form.

201. (Currently amended) A method for inducing a therapeutic host immune response against a multi-epitopic *in vivo* antigen that does not elicit an effective host immune response, comprising administering to the host a composition comprising a ~~binding agent non-radiolabeled antibody or antigen fragment thereof~~ that specifically binds to an epitope on the ~~multi-epitopic *in vivo* antigen, the binding agent present in the composition being non-radiolabeled, thereby forming a binding agent/antigen complex, whereby the antibody or antigen binding fragment thereof forms an immune complex with the antigen, and whereby an effective host humoral immune response is elicited against a second epitope on the antigen, the binding agent antibody or antigen binding fragment thereof being present in the composition in an amount of from 0.1  $\mu$ g to 2-mg 200  $\mu$ g per kg of body weight of the host.~~

202. (Previously presented) The method of claim 201, wherein the antigen is a soluble antigen.

203. (Previously presented) The method of claim 201, wherein the antigen is a tumor antigen.

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204. **(Previously presented)** The method of claim 202, wherein the antigen is a tumor antigen.

205. **(Cancelled)**

206. **(Currently amended)** The method of claim 201, wherein the composition ~~comprising a binding agent~~ further comprises one or more adjuvants, one or more carriers, one or more excipients, one or more stabilizers, one or more pharmaceutically acceptable carriers and/or physiologically acceptable saline.

207. **(Previously presented)** The method of claim 201, wherein the composition is administered by any immunologically suitable route.

208. **(Previously presented)** The method of claim 207, wherein administering by any immunologically suitable route comprises administering by intravenous, subcutaneous, intraperitoneal, intradermal, intramuscular, or intralymphatic routes.

209. **(Previously presented)** The method of claim 207, wherein administering by any immunologically suitable route comprises administering in solution, tablet, or aerosol form.

210-234. **(Cancelled)**

235. **(Cancelled)**

236. **(Currently amended)** The method ~~of claim 235~~ according to any one of claims 113, 117-120, 129-131, 133-135, 137-139, 141-144, 170-174, 180-182, 190-192, 194-195, 197-204, or 206-209, wherein the antibody or antigen binding fragment thereof is a murine monoclonal antibody or antigen binding fragment thereof.

237. **(Currently amended)** The method ~~of claim 235~~ according to any one of claims 113, 117-120, 129-131, 133-135, 137-139, 141-144, 170-174, 180-182, 190-192, 194-195, 197-204, or 206-209, wherein the antibody is an Ab1 antibody or antigen binding fragment thereof.

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238. (Cancelled)

239. (Currently amended) The method according to any one of claims ~~claim 123 or 185~~ 113, 135, 174, 195 or 201 wherein the antibody or ~~polypeptide including an~~ antigen binding portion fragment thereof is selected from the group consisting of a chimeric monoclonal antibody, a genetically engineered ~~monoclonal~~ antibody, a Fab fragment, a F(ab')<sub>2</sub> fragment, a single chain antibody, and a single chain antibody fragment.

240. (Cancelled)

241. (Previously presented) The method according to claim 113, wherein the T cell response is directed against a host cell of the patient.

242. (Previously presented) The method according to claim 241, wherein the host cell of the patient is a cancerous cell.

243. (Withdrawn) The method according to claim 113, wherein the antigen is a cell-surface-associated antigen with a carbohydrate moiety.

244. (Withdrawn) The method according to claim 243, wherein the cell-surface-associated antigen is a tumor-associated antigen.

245-246. (Cancelled)

247. (Withdrawn) The method according to claim 113, wherein the ~~binding agent~~ antibody or antigen binding fragment thereof is photoactivated.

248. (Withdrawn) The method according to claim 135, wherein the ~~binding agent~~ antibody or antigen binding fragment thereof is photoactivated.

249. (Withdrawn) The method according to claim 174, wherein the ~~binding agent~~ antibody or antigen binding fragment thereof is photoactivated.



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250. (Withdrawn) The method according to claim 201, wherein the ~~binding agent~~ antibody or antigen binding fragment thereof is photoactivated.

251. (Previously presented) The method of claim 135, further comprising eliciting a humoral immune response against a second epitope on the antigen.

252-253. (Cancelled)

254. (Currently amended) The method of claim 113, wherein the ~~binding agent~~ antibody or antigen binding fragment thereof is administered to a human host in a 2 mg dosage.

255. (Currently amended) The method of claim 135, wherein the ~~binding agent~~ antibody or antigen binding fragment thereof is administered to a human host in a 2 mg dosage.

256. (Currently amended) The method of claim 174, wherein the ~~binding agent~~ antibody or antigen binding fragment thereof is administered to a human host in a 2 mg dosage.

257. (Currently amended) The method of claim 201, wherein the ~~binding agent~~ antibody or antigen binding fragment thereof is administered to a human host in a 2 mg dosage.

258. (Currently amended) ~~The method of claim 113~~ A method for inducing a therapeutic host immune response against a multi-epitopic *in vivo* antigen that does not elicit an effective host immune response, the method comprising:

contacting a multi-epitopic antigen present in a host's serum with a composition comprising a non-radiolabeled antibody or antigen binding fragment thereof that specifically binds to a first epitope on the multi-epitopic *in vivo* antigen, whereby the antibody or antigen binding fragment thereof forms an immune complex with the antigen, and whereby an effective host T cell response is elicited against the antigen in the immune complex, wherein said ~~contacting~~ method comprises administering contacting said antigen and said composition to ~~the host~~ at least two times.

259. (Previously presented) The method of claim 113, wherein said host is a human.

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260. (Currently amended) The method of claim 113, wherein said ~~binding agent~~ antibody or antigen binding fragment thereof is ~~a non-human~~ an animal antibody or ~~[[a]]~~ antigen binding fragment thereof.

261. (Currently amended) The method of claim 260, wherein said ~~binding agent~~ antibody or antigen binding fragment thereof is a murine monoclonal antibody or ~~[[a]]~~ antigen binding fragment thereof.

262. (Currently amended) ~~The method of claim 135~~ A method for inducing a therapeutic host immune response against a multi-epitopic *in vivo* antigen that does not elicit an effective host immune response, comprising administering to the host a composition comprising a non-radiolabeled antibody or antigen binding fragment thereof that specifically binds to an epitope on the multi-epitopic *in vivo* antigen, whereby the antibody or antigen binding fragment thereof forms an immune complex with the antigen, and whereby an effective host T cell response is elicited against the antigen, the antibody or antigen binding fragment thereof being present in the composition in an amount of from 0.1 µg to 200 µg per kg of body weight of the host, wherein said ~~contacting method~~ comprises administering said composition to the host at least two times.

263. (Previously presented) The method of claim 135, wherein said host is a human.

264. (Currently amended) The method of claim 135, wherein said ~~binding agent~~ antibody or antigen binding fragment thereof is ~~a non-human~~ an animal antibody or ~~[[a]]~~ antigen binding fragment thereof.

265. (Currently amended) The method of claim 264, wherein said ~~binding agent~~ antibody or antigen binding fragment thereof is a murine monoclonal antibody or ~~[[a]]~~ antigen binding fragment thereof.

266. (Currently amended) ~~The method of claim 174~~ A method for inducing a therapeutic host immune response against a multi-epitopic *in vivo* antigen that does not elicit an effective host immune response, the method comprising contacting a multi-epitopic *in vivo* antigen

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present in a host's serum with a composition comprising a non-radiolabeled antibody or antigen binding fragment thereof that specifically binds to an epitope on the multi-epitopic *in vivo* antigen, whereby the antibody or antigen binding fragment thereof forms an immune complex with the antigen, and whereby the immune complex elicits an effective host humoral immune response against a second epitope of the multi-epitopic *in vivo* antigen, wherein said ~~contacting~~ method comprises ~~administering~~ contacting said antigen and said composition to the host at least two times.

267. (Previously presented) The method of claim 174, wherein said host is a human.

268. (Currently amended) The method of claim 174, wherein said ~~binding-agent antibody or antigen binding fragment thereof~~ is ~~a non-human~~ an animal antibody or [[a]] antigen binding fragment thereof.

269. (Currently amended) The method of claim 268, wherein said ~~binding-agent antibody or antigen binding fragment thereof~~ is a murine monoclonal antibody or [[a]] antigen binding fragment thereof.

270. (Currently amended) ~~The method of claim 201~~ A method for inducing a therapeutic host immune response against a multi-epitopic *in vivo* antigen that does not elicit an effective host immune response, comprising administering to the host a composition comprising a non-radiolabeled antibody or antigen fragment thereof that specifically binds to an epitope on the multi-epitopic *in vivo* antigen, whereby the antibody or antigen binding fragment thereof forms an immune complex with the antigen, and whereby an effective host humoral immune response is elicited against a second epitope on the antigen, the antibody or antigen binding fragment thereof being present in the composition in an amount of from 0.1 µg to 200 µg per kg of body weight of the host, wherein said ~~contacting~~ method comprises administering said composition to the host at least two times.

271. (Previously presented) The method of claim 201, wherein said host is a human.

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272. (Currently amended) The method of claim 201, wherein said ~~binding agent~~ antibody or antigen binding fragment thereof is a ~~non-human~~ an animal antibody or ~~[[a]]~~ antigen binding fragment thereof.

273. (Currently amended) The method of claim 272, wherein said ~~binding agent~~ antibody or antigen binding fragment thereof is a murine monoclonal antibody or ~~[[a]]~~ antigen binding fragment thereof.

274. (New) The method of claim 135, wherein the multi-epitopic antigen is selected from the group consisting of CA125, CA19.9, CA15.3 and PSA.

275. (New) The method of claim 201, wherein the multi-epitopic antigen is selected from the group consisting of CA125, CA19.9, CA15.3 and PSA.

276. (New) A method for inducing a therapeutic host immune response against a multi-epitopic *in vivo* antigen that does not elicit an effective host immune response, the method comprising: contacting a multi-epitopic antigen selected from the group consisting of CA125, CA19.9, CA15.3 and PSA present in a host's serum with a composition comprising a non-radiolabeled antibody or antigen binding fragment thereof that specifically binds to a first epitope on the multi-epitopic *in vivo* antigen, whereby the antibody or antigen binding fragment thereof forms an immune complex with the antigen, and whereby an effective host T cell response is elicited against the antigen in the immune complex.

277. (New) A method for inducing a therapeutic host immune response against a multi-epitopic *in vivo* antigen that does not elicit an effective host immune response, the method comprising: contacting a multi-epitopic antigen selected from the group consisting of CA125, CA19.9, CA15.3 and PSA present in a host's serum with a composition comprising a non-radiolabeled antibody or antigen binding fragment thereof that specifically binds to an epitope on the multi-epitopic *in vivo* antigen, whereby the antibody or antigen binding fragment thereof forms an immune complex with the antigen, and whereby the complex elicits an effective host humoral immune response against a second epitope of the multi-epitopic *in vivo* antigen.

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278. (New) A method for inducing a therapeutic host immune response against a multi-epitopic *in vivo* antigen that does not elicit an effective host immune response, the method comprising: contacting a multi-epitopic antigen selected from the group consisting of CA125, CA19.9, CA15.3 and PSA present in a host's serum with a composition comprising a non-radiolabeled antibody or antigen binding fragment thereof that specifically binds to an epitope on the multi-epitopic *in vivo* antigen, whereby the antibody or antigen binding fragment thereof forms an immune complex with the antigen, and whereby the complex elicits an effective host T cell response against the antigen in the immune complex and an effective humoral immune response against a second epitope of the multi-epitopic *in vivo* antigen.